



**OSD**

On-Screen Display

**X-WDR**

# WEATHERPROOF D&N IR CAMERA

## DIGITAL IR CAMERA SERIES

- WDR (Wide Dynamic Range)
- Day & Night (ICR)
- Sharpness Enhancement Adjustable (580 TV Lines)
- Privacy Zone Selectable
- 3D-DNR (Digital Noise Reduction)
- ECLPS (ECLIPSE)
- DSS (Digital Slow Shutter)

**Infrared LED**

**DIGITAL**



**OWNER'S MANUAL**

IR LED Color Camera Series



**CAUTION**  
**RISK OF ELECTRIC SHOCK**  
**DO NOT OPEN**



**CAUTION!** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).  
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

### Explanation of two Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance-(servicing) instructions in the literature accompanying the appliance.

THE GRAPHIC SYMBOLS WITH SUPPLEMENTAL MARKING ARE ON THE BOTTOM OF THE SYSTEM.

"WARNING-TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE"

### **INFORMATION**

This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

### **WARNING**

- Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

*This installation should be made by a qualified service person and should abide to all local codes.*





**Thank you for purchasing this COLOR VIDEO CAMERA.**

Before using this camera, please read this operation manual carefully to obtain the best result and keep this manual for future reference.

1. SAFETY INSTRUCTIONS .....	5
2. PRECAUTIONS .....	6
3. FEATURES .....	7
4. COMPOSITION .....	8
5. NAME AND FUNCTIONS .....	9
6. INSTALLATION .....	10
7. CONNECTIONS .....	14

8. REMOTE CONTROLLER OPERATION ...	17
9. COMMUNICATION PROTOCOL .....	19
10. OPERATING CAMERA .....	20
11. TROUBLESHOOTING .....	43
12. SPECIFICATIONS	
. 12VDC Input Model .....	44

# 1. SAFETY INSTRUCTIONS

COLOR VIDEO CAMERA

## Read Instructions

Read all of the safety and operating instructions before using the product.

## Retain Instructions

Save this manual for later use.

## Cleaning

Unplug this appliance from wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

## Installation







Do not place this product on an unstable cart, stand, or table. The product may fall causing serious injury to a child or adult, and damage to the product. Use only with a cart or a stand recommended by your supplier/reseller. Mounting should follow the manufacturer's instructions, and should use a mounting accessory recommended by manufacturer.

## Power source


This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.

## 2. PRECAUTIONS

### WEATHERPROOF IR LED

-  **Do not install the camera in extreme temperature conditions.**
  - ➔ An operating temperature of -10°C(14°F) to +45°C(113°F) is standard. this temperature range can be widened when a built-in fan/heater works automatically. <-30°C(-22°F) to +50°C(122°F)>
-  **Do not install the camera under unstable lighting conditions.**
  - ➔ Severe lighting change or flicker can cause the camera to work improperly.
-  **Never use the camera close to a gas or oil leak.**
  - ➔ It can cause malfunctions to occur.
-  **Do not disassemble the camera.**
  - ➔ There are no user-serviceable parts inside it.
-  **Do not drop the camera or subject them to physical shocks.**
  - ➔ It can cause malfunctions to occur.
-  **Never keep the camera face to strong light directly.**
  - ➔ It can damage CCD.

### **Note**

-  **When this camera is installed near wireless communication devices that emits strong electromagnetic field, irregularity such as noise on the monitor may appear.**

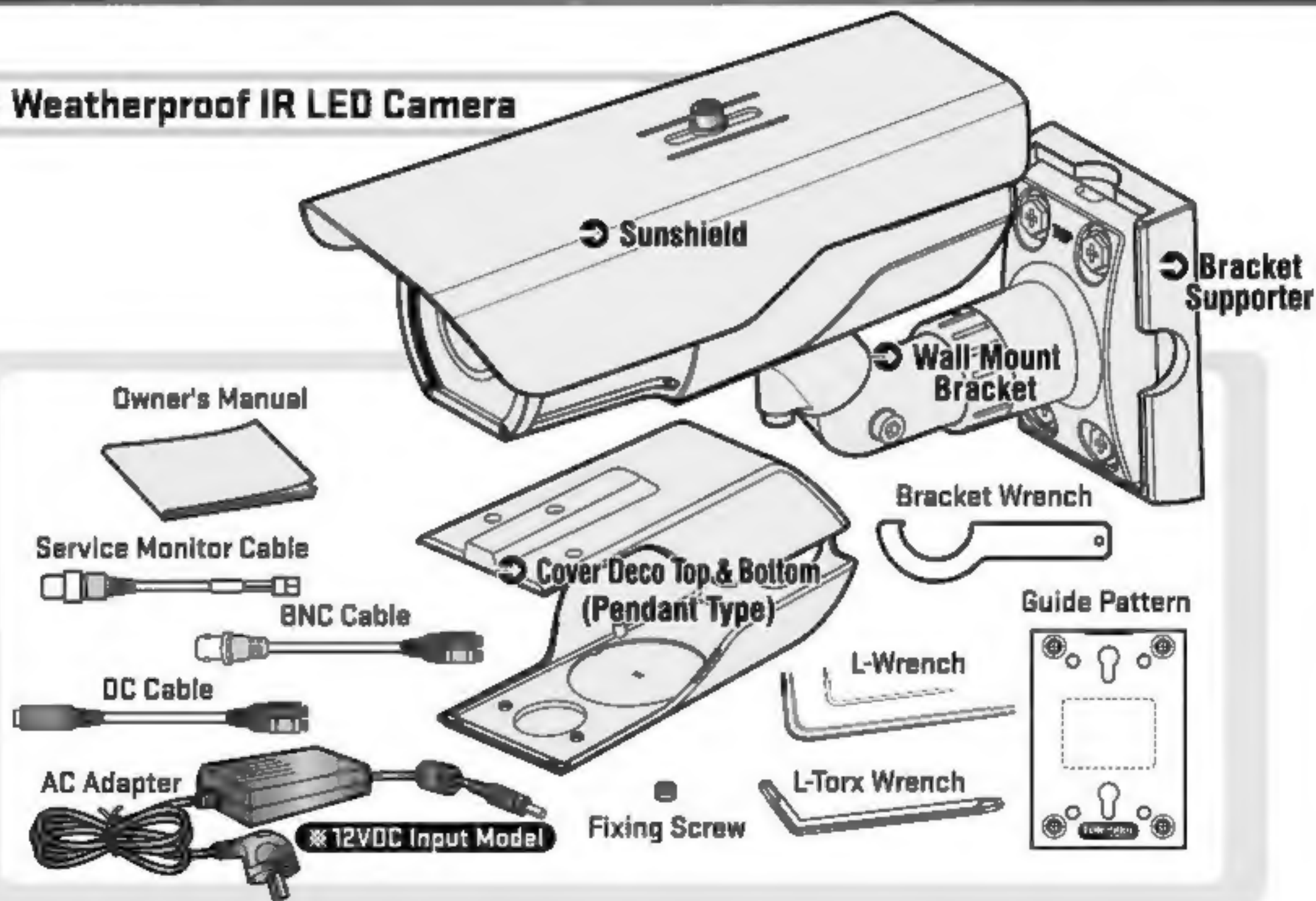
### 3. FEATURES

#### COLOR VIDEO CAMERA

- **1/3 inch High Sensitivity CCD**
- **Min. Illumination (F1.2, 30IRE)**
  - 0.05 Lux (Color)
  - 0.0002 Lux (Sens-up Auto, Color)
  - 0.00 Lux (IR LED ON)
- **Selectable, Day & Night (ICR) – TON (Built-in the ICR Filter)**
- **WDR (Wide Dynamic Range)**
  - Improves picture quality and detail in surrounding with a wide range of light by increasing exposure in dark areas while decreasing it in bright, oversaturated areas.
- **RS-485 Communication Control Support – Remote OSD menu control via an RS-485 interface is supported.**
- **High Performance Menus For Functions**
  - Privacy zone selectable
  - Motion detection selectable
  - Sharpness enhancement adjustable (580 TV Lines)
  - V-FLIP / MIRROR / ROTATE
  - 3D-DNR (Digital Noise Reduction)
  - BLC (Back Light Compensation)
  - ECLPS (ECLIPSE)
  - DSS (Digital Slow Shutter)
  - Stabilizer
- **Built-in Fan / Heater – Depends on internal temperature, it operates automatically.**
  - Fan ON : over 45°C / • Heater ON : under 10°C

# 4. COMPOSITION

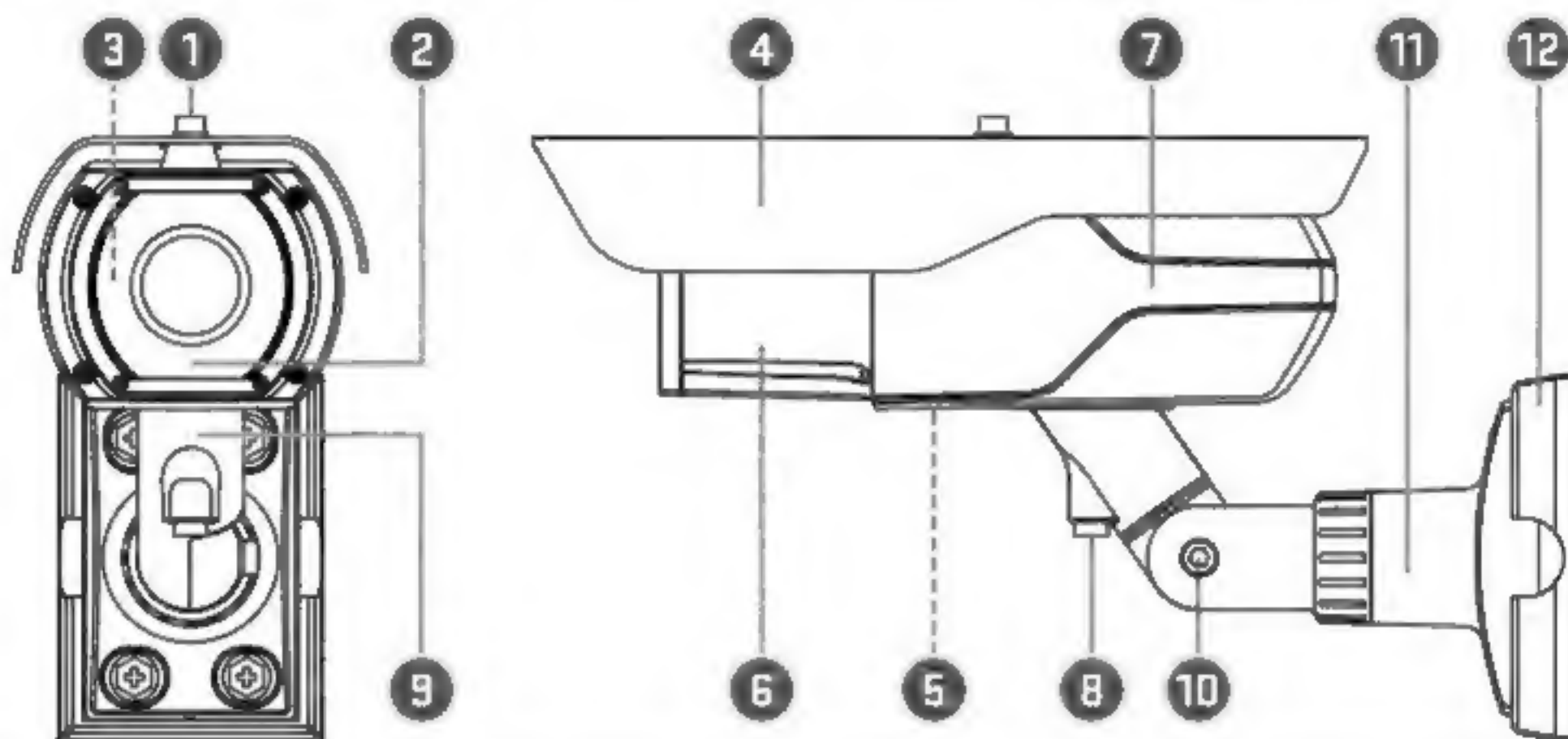
## ➔ Weatherproof IR LED Camera





## 5. NAME AND FUNCTIONS

COLOR VIDEO CAMERA



- 1. Fixing Bolt for Sunshield: You can unfasten the bolt in order to fix mounting bracket above.
- 2. Photo Sensor
- 3. IR LED (Infrared LED): Automatically controlled according to light condition.
- 4. Sunshield: To reduce direct sunlight and protect the camera unit from rain or snow outdoor.
- 5. Function Selection/ 6. Front Cover/ 7. Rear Body(with Cover Deco Top & Bottom)
- 8. Mounting Bracket Fixing Bolt: Fix the camera main body to bracket by wrench bolt.
- 9. Base Adapter/ 10. Base Adapter Fixing Bolt/ 11. Wall Mount Bracket/ 12. Bracket Supporter

### ➞ Zoom and Focus Adjustment

- Undo the four screws and remove the front cover.
- Unlock the zoom(or the focus) lever to release.
- Adjust the zoom(or the focus) lever by moving it to Wide(Near) or Tele(Far) position.

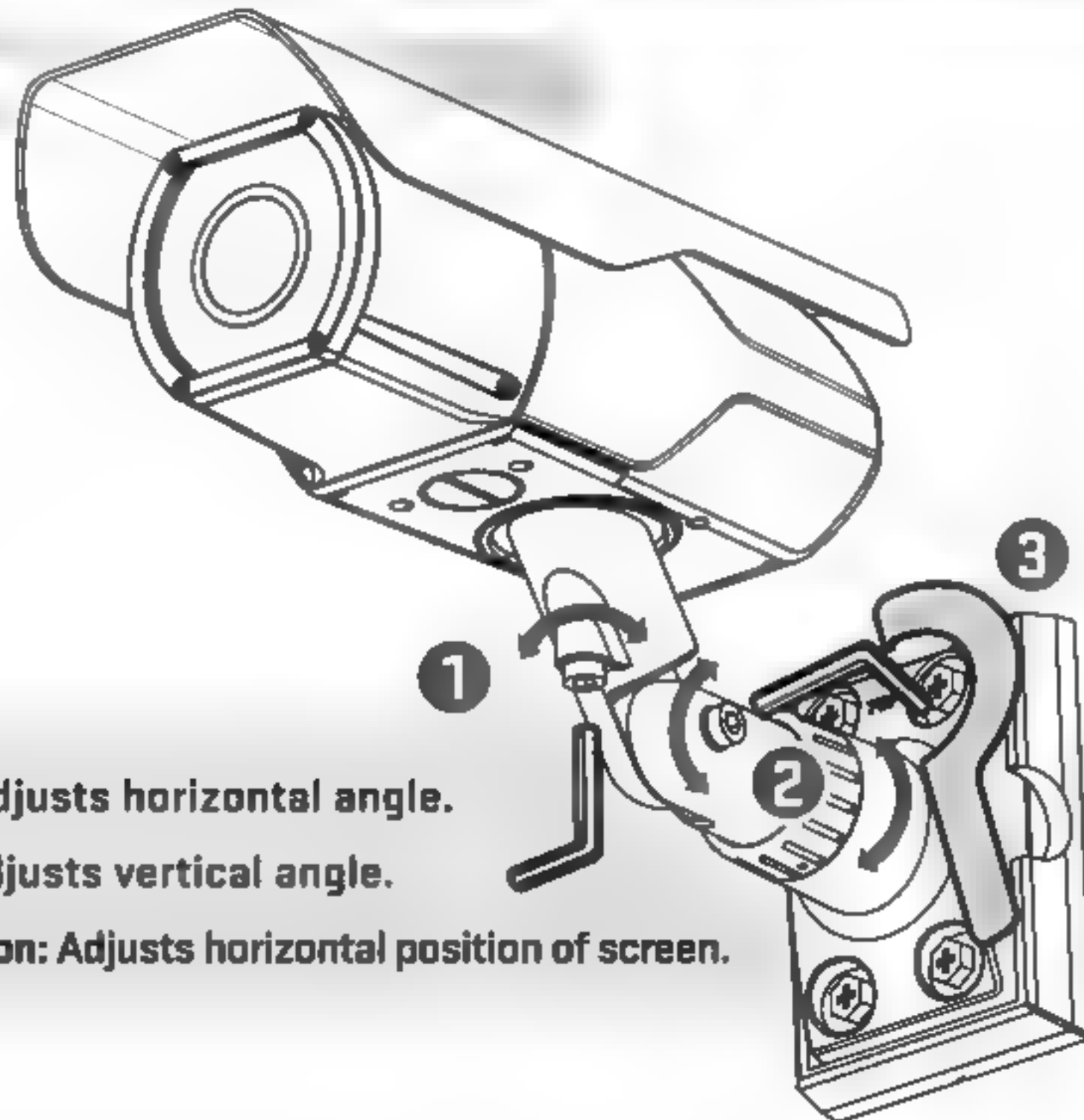


### ➞ Lens View

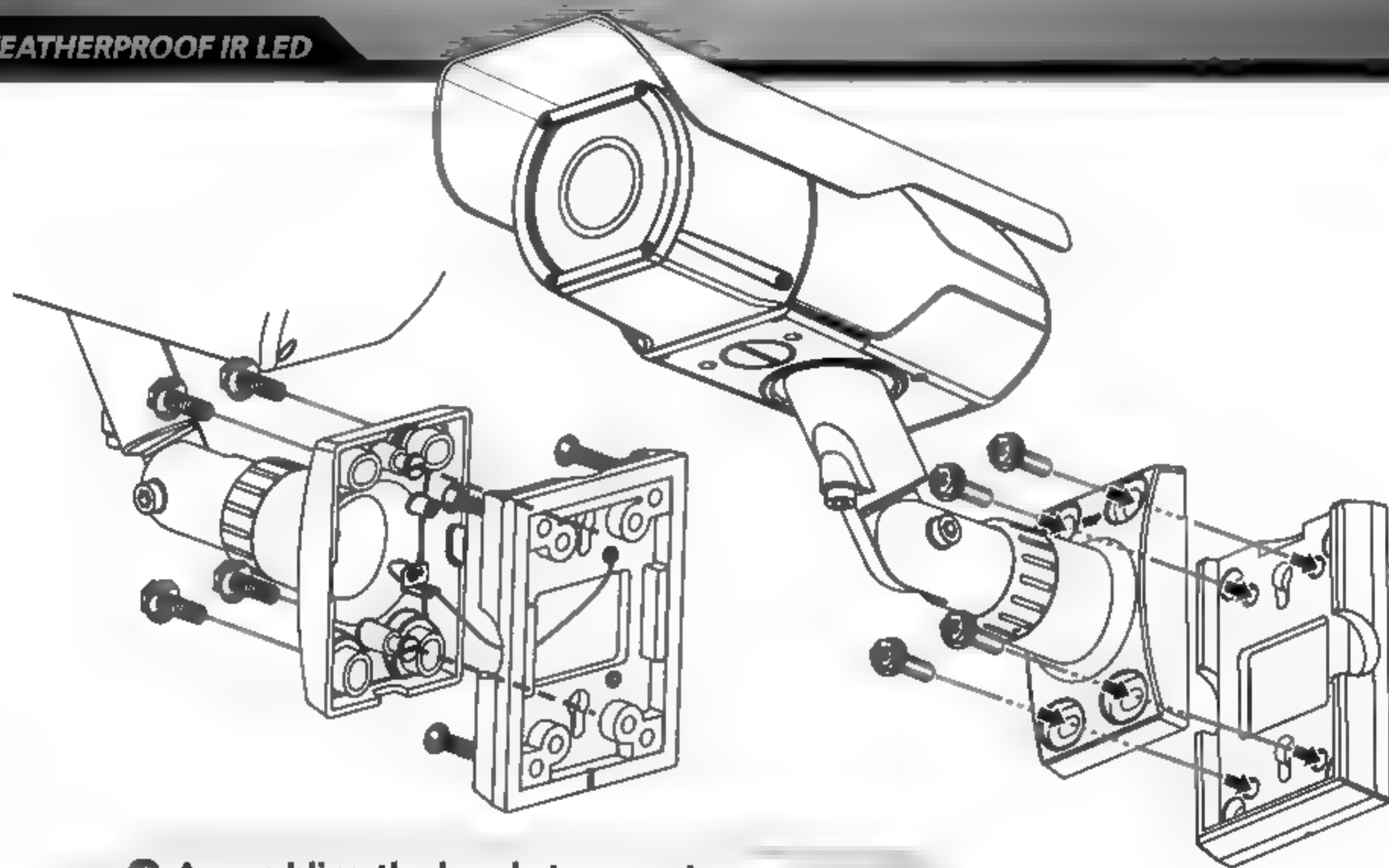


- After adjustment, tighten the zoom(or focus) lever, taking care that the adjusted position does not change.
- After all adjustments are complete, refit the front cover and ensure the screws are properly tightened.

## ➔ Camera Lay-out

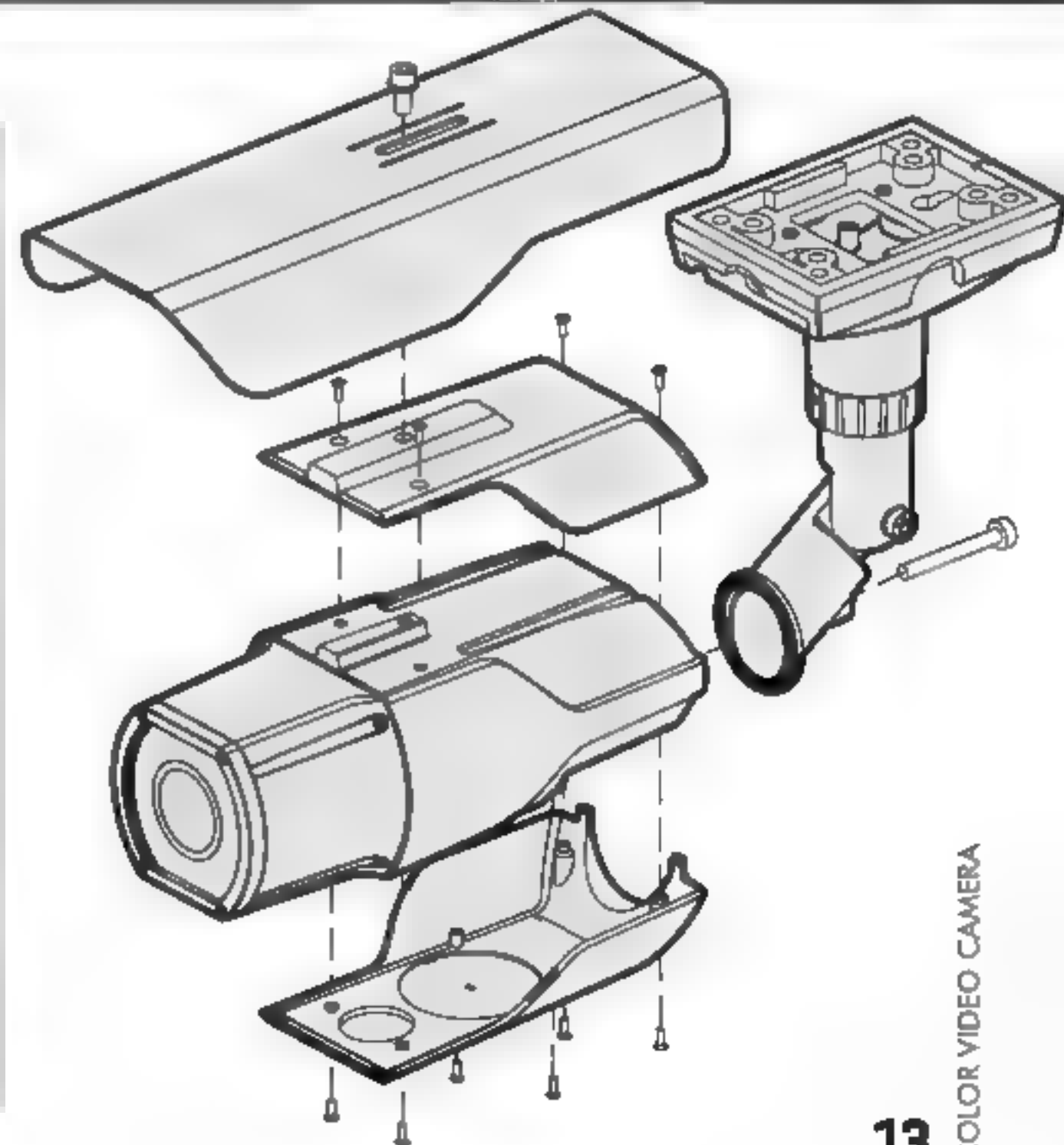
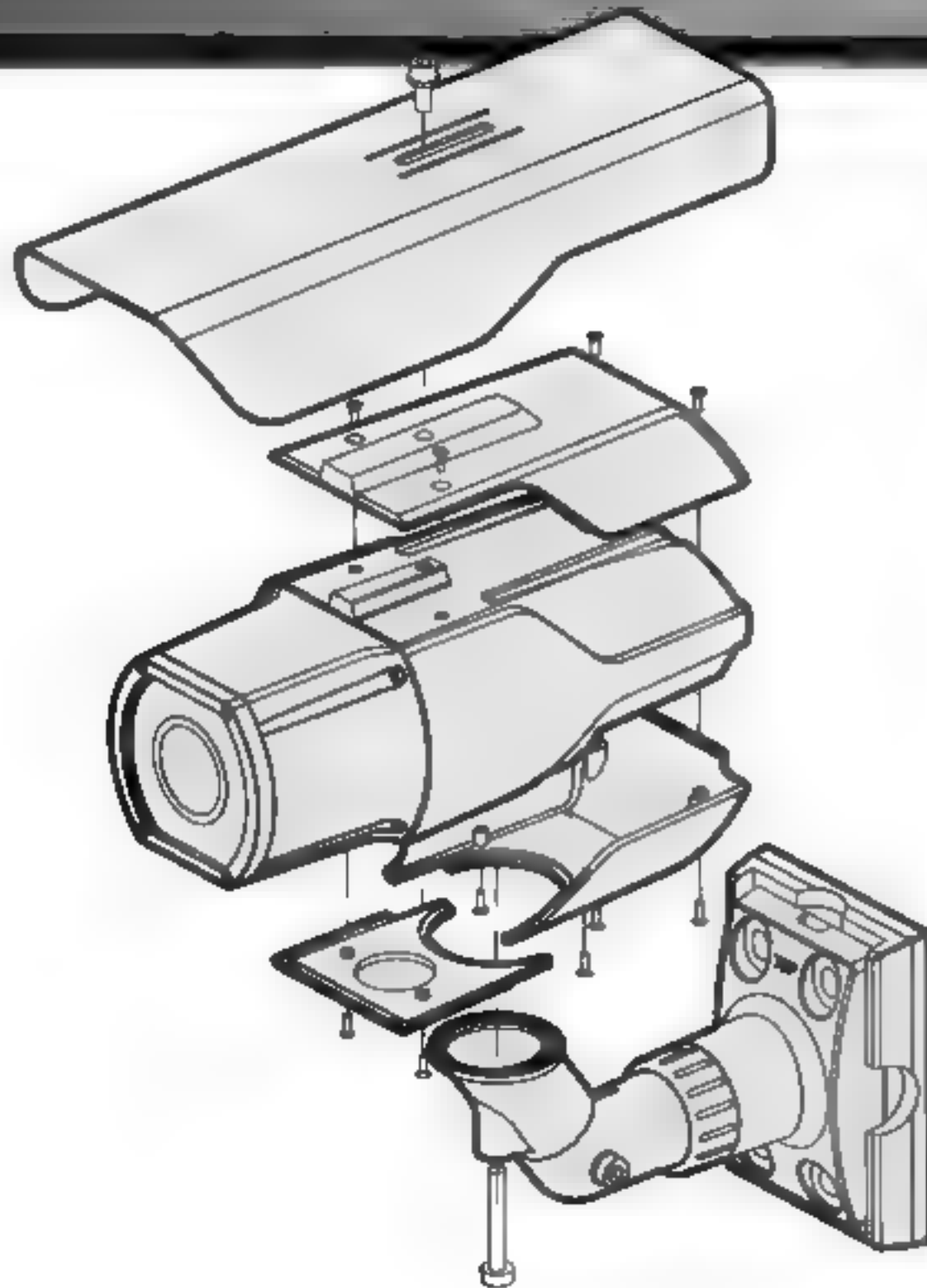


- ① **Pan rotation:** Adjusts horizontal angle.
- ② **Tilt rotation:** Adjusts vertical angle.
- ③ **Horizontal rotation:** Adjusts horizontal position of screen.



➡ **Assembling the bracket supporter**





### ➔ Connecting to Power Supply

- The wire is polarized.
- Use 12V DC power source.

No.	Line Color	Function
#1	RED	DC 12V
#2	ORANGE	GND
#3	BLACK	GND(VIDEO)
#4	YELLOW	VIDEO OUT
#5	GREEN	RS-485(+)
#6	BROWN	RS-485(-)

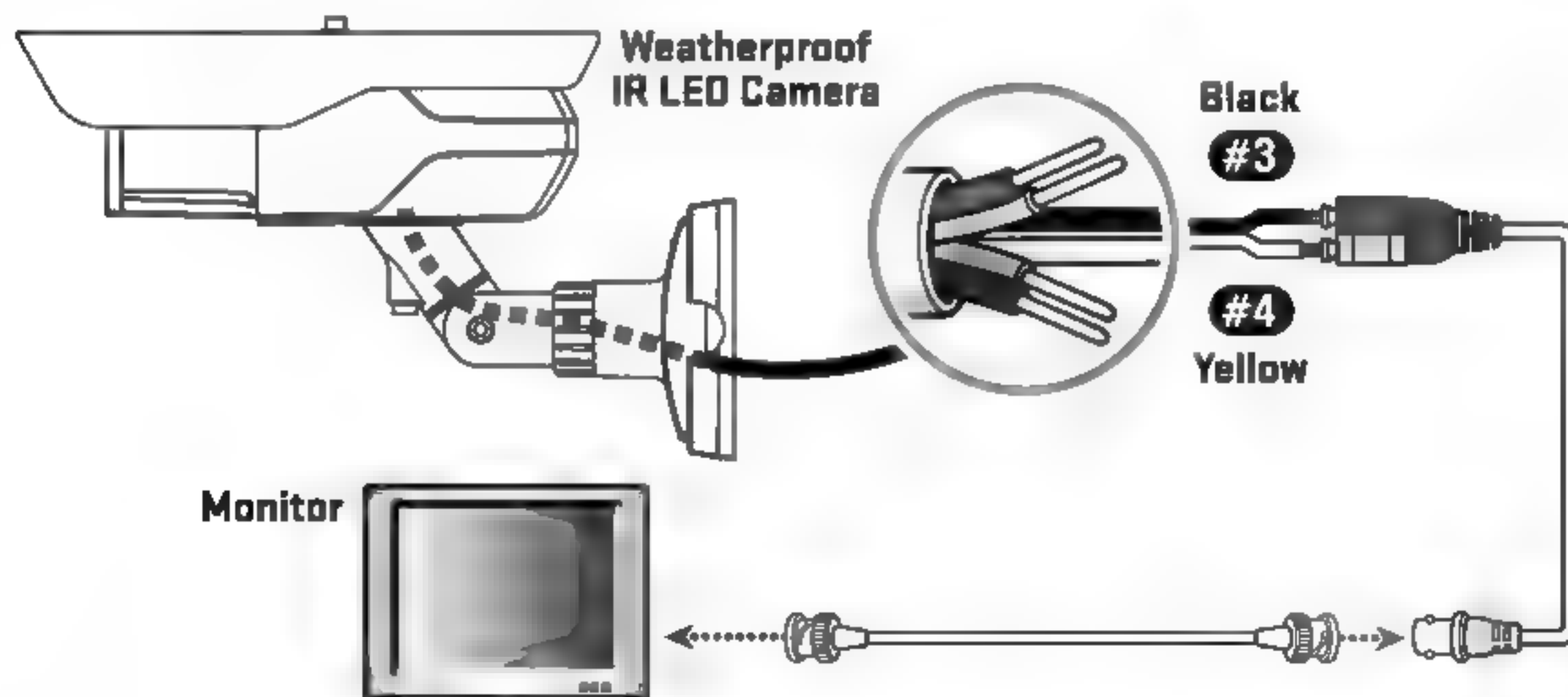
#### ⚠ Note

- Make sure you are using only the supplied AC adapter.

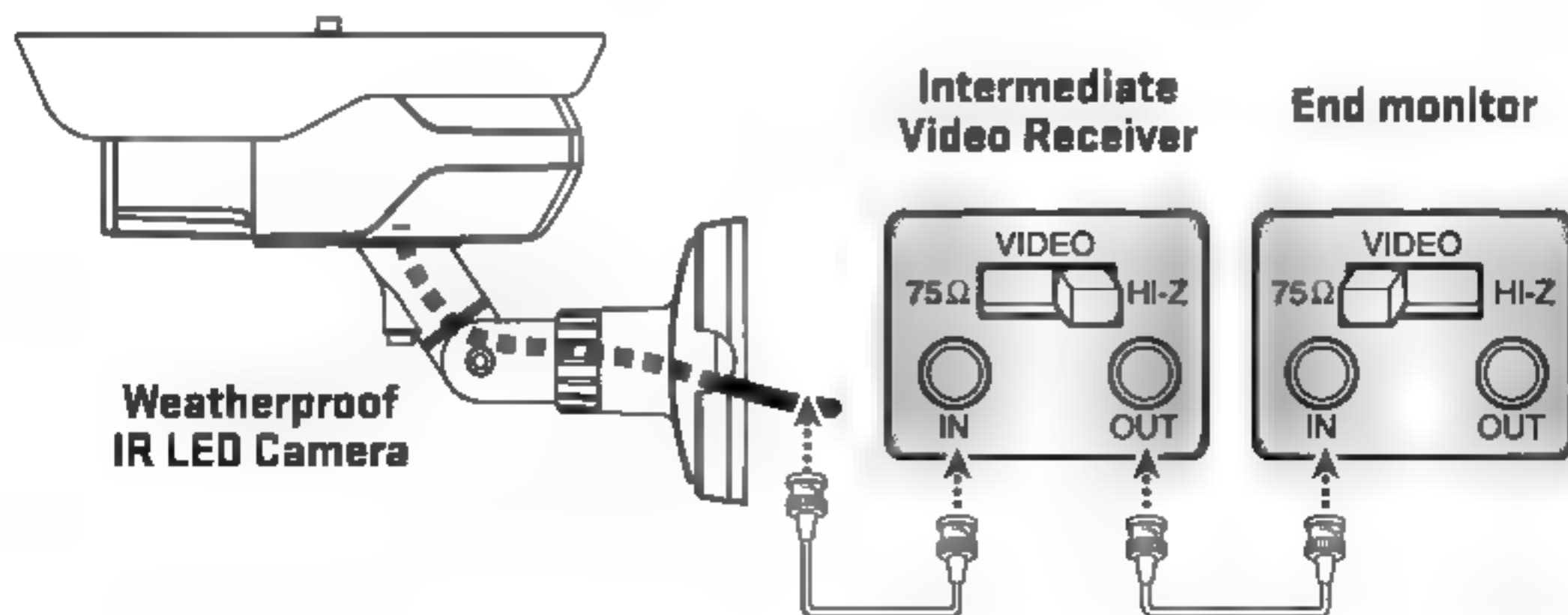


## ➔ Connecting to Monitor

Cable the VIDEO out to the monitor video in jack.



- As the connecting method varies with the instruments, refer to the manual supplied with the instrument.
- Connect the cable after power is turned off.
- Set the 75 $\Omega$ / Hi-Z selection switch as shown below if you have an intermediate device.

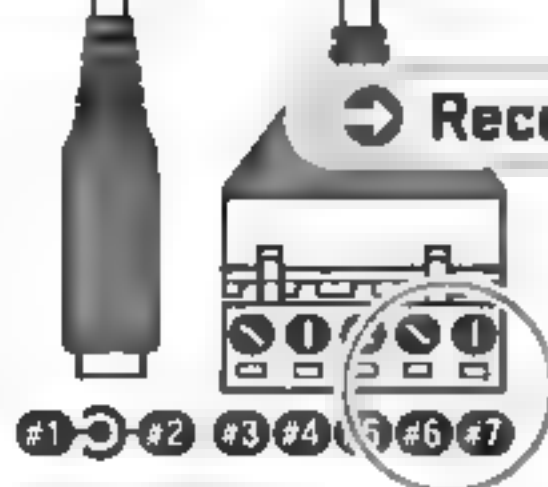




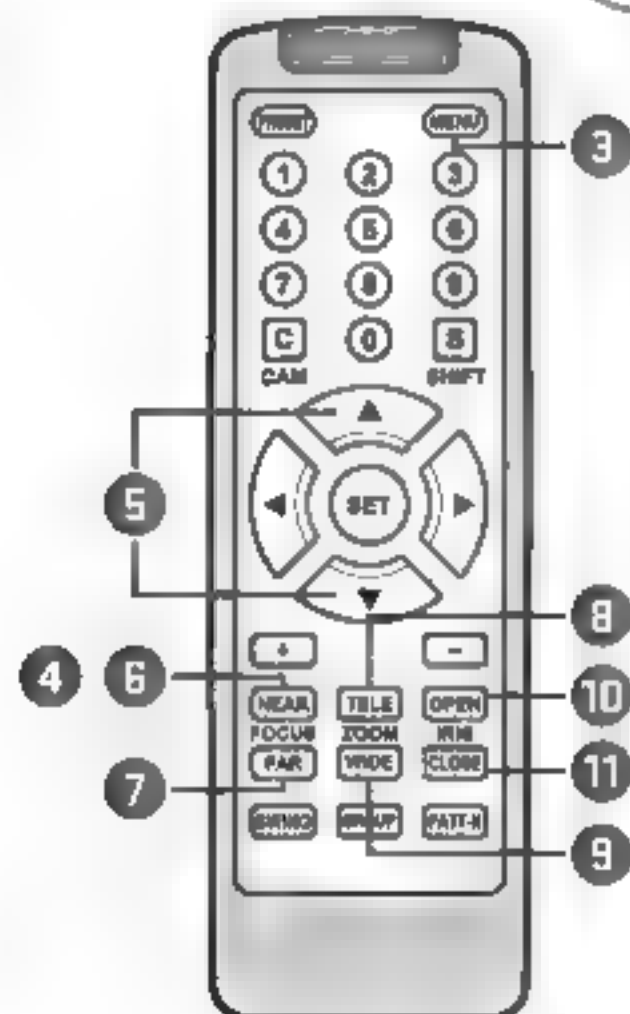
## 8. REMOTE CONTROLLER OPERATION

COLOR VIDEO CAMERA

### Receiver & Remote Control



Pin No.	Function
#1	SC100 Power (+12VDC)
#2	SC100 Power (GND)
#3	Sensor Power (+5 -12VDC)
#4	Sensor Input 1 (-)
#5	Sensor Input 2 (-)
#6	RS-485 TX (-)
#7	RS-485 TX (+)



#### 1. Camera Selection

- After camera connects with receiver, firstly select camera I.D.
- Press desired camera I.D. number(1~255) and then press C(cam) button.

Example: • 1+C ⇒ 1 cam selected.  
• 255+C ⇒ 255 cam selected.

#### 2. Protocol selection

- The protocol of zoom camera is CNB protocol(9600) when it takes out of manufacturer's warehouse.
- The default protocol can be set by specified 3-digit number combination which is "886".
- Also Zoom camera supports PELCO-D(2400) and PELCO-P(9600).

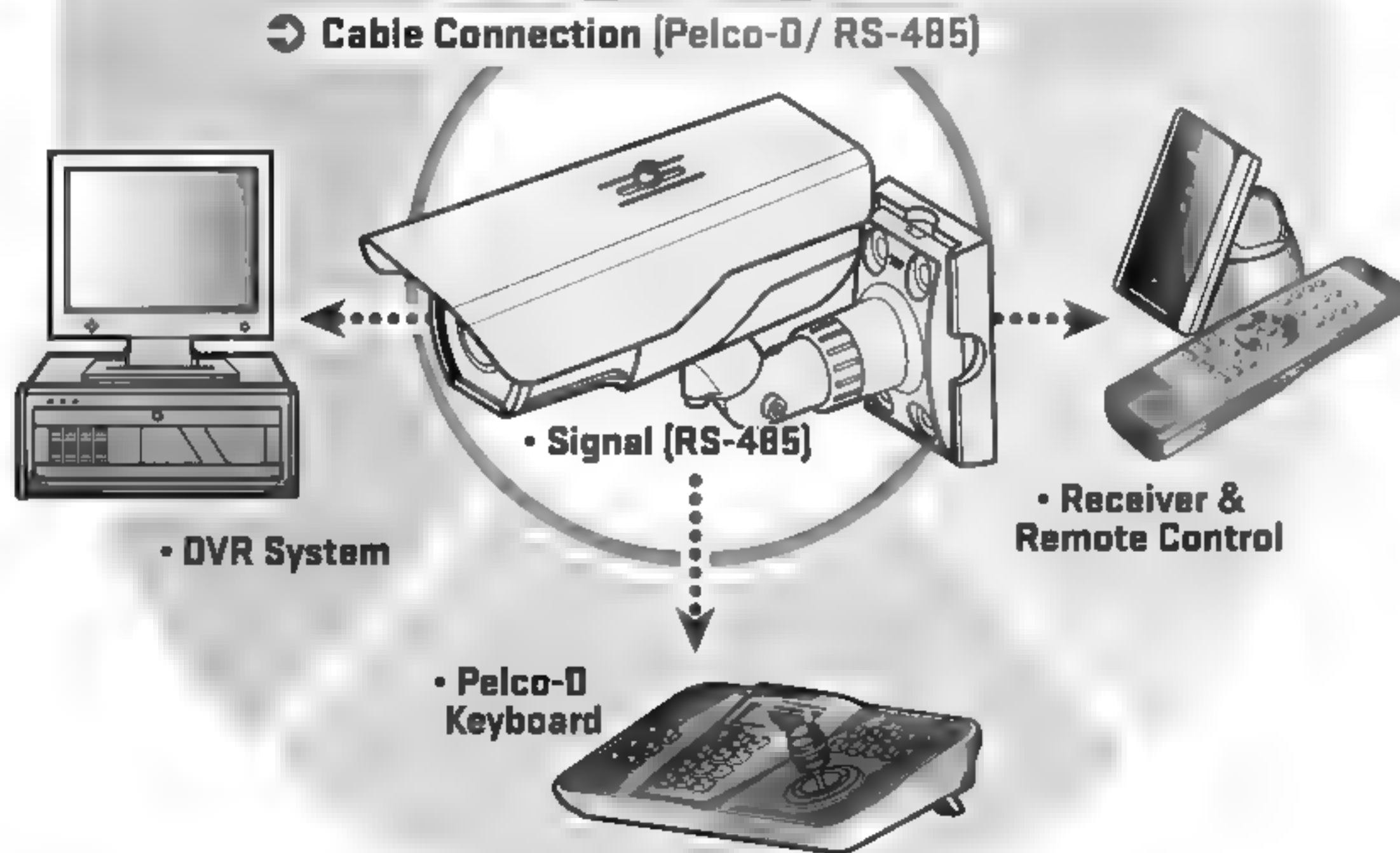
Example: • 886+SET key ⇒ CNB Zoom protocol(9600)  
• 880+SET key ⇒ Pelco-D protocol(2400)

3. [MENU] Entering OSD menu./ 4. [NEAR] Set function in OSD menu.

5. [UP] [DOWN] Select function in OSD menu.

6. [NEAR] FOCUS NEAR/ 7. [FAR] FOCUS FAR/ 8. [TELE] ZOOM TELE/ 9. [WIDE] ZOOM WIDE

10. [OPEN] IRIS OPEN/ 11. [CLOSE] IRIS CLOSE



# 9. COMMUNICATION PROTOCOL

PELCO "D" Byte Format

COLOR VIDEO CAMERA

\* Baud rate : 4800, 9600, 19200, 38400, 57600

Function	KEY UP (ZOOM TELE)						
	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
MSG	0xFF	ID	0x00	0x20	0x00	0x00	CS

Function	KEY DOWN (ZOOM WIDE)						
	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
MSG	0xFF	■	0x00	0x40	0x00	0x00	CS

Function	KEY LEFT (FOCUS NEAR)						
	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
MSG	0xFF	ID	0x01	0x00	0x00	0x00	CS

Function	KEY RIGHT (FOCUS FAR)						
	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
MSG	0xFF	■	0x00	0x80	0x00	0x00	CS

Frame	Function	KEY MENU (OSD MENU)						
		BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
PELCO	MSG	0xFF	ID	0x00	0x23	0x00	0x5F	CS
V/D	MSG	0xFF	ID	0x00	0x03	0x00	0x62	CS
CNR	MSG	0xFF	ID	0x40	0x00	0x00	0x00	CS
	MSG	0xFF	ID	0x00	0x07	0x00	0x5F	CS

- ! ID=00hex : ■ check skip mode (Camera will not check the camera ID.)
- ID=01hex ~ FFhex : ID check mode (Camera will check the camera ID. If the ID contained in command packet isn't identical to the current camera ID, the received command will be ignored and deleted.)

# 10. OPERATING CAMERA

WEATHERPROOF IR LED

SETUP MENU			
CAM NAME	ON / OFF		
LENS	DC LENS		
EXPOSURE	AGC	OFF / LOW / MIDDLE / HIGH	
	BRIGHTNESS	0 ~ 80	
	SHUTTER	AUTO / OFF / A.FLK / x (2 ~ 512) / (1/90000 ~ 1/160)	
	DSS	OFF / AUTO x (2 ~ 128)	
DAY / NIGHT	IRED	D/N IRED LEVEL	LOW / MIDDLE / HIGH
		FILTER OLY	1, 3, 5, 10, 15, 30, 60 SEC
		NIGHT BURST	ON / OFF
	DAY		
	NIGHT		
WDR / BLC / ECLPS	WDR	WDR LEVEL	LOW / MIDDLE / HIGH
		LONG	0 ~ 60
		SHORT	0 ~ 60
	BLC	BLC LEVEL	LOW / MIDDLE / HIGH
	ECLPS	AREA SETTING	ON / OFF (16 ZONES)
		ALL AREA SET	ON / OFF
		MASK COLOR	GRAY / D.GRAY / BLACK
		ECLPS LEVEL	1 ~ 5



<b>WHITE BAL</b>	<b>ATW1</b>		
	<b>ATW2</b>		
	<b>PUSH</b>		
	<b>MANUAL</b>	<b>COLOR TEMP</b>	<b>INDOOR / OUTDOOR</b>
		<b>RED</b>	<b>-100 ~ 100</b>
		<b>BLUE</b>	<b>-100 ~ 100</b>
<b>3D-DNR</b>	<b>DN</b>	<b>LEVEL</b>	<b>0 ~ 63</b>
		<b>GLOBAL MOTION</b>	<b>ON / OFF</b>
<b>IMAGE ADJ</b>	<b>DIGITAL ZOOM</b>	<b>ZOOM</b>	<b>x 1.00 - x 6.13</b>
		<b>DZOOM PAN</b>	<b>-100 ~ 100</b>
		<b>DZOOM TILT</b>	<b>-100 ~ 100</b>
	<b>D-EFFECT</b>	<b>OFF / V-FLIP / MIRROR / ROTATE</b>	
	<b>COLOR</b>	<b>ON / OFF</b>	
	<b>CONTRAST</b>	<b>0 ~ 100</b>	
	<b>SHARPNESS</b>	<b>0 ~ 100</b>	
	<b>CR GAIN</b>	<b>-100 ~ 100</b>	
	<b>CB GAIN</b>	<b>-100 ~ 100</b>	
<b>SPECIAL</b>	<b>CAMERA ID</b>	<b>CAMERA ID</b>	<b>000 ~ 255</b>
		<b>ID POSITION</b>	

## SPECIAL

## MOTION DET

ZONE NUMBER	ZONE 1 ~ ZONE 4
ZONE STATE	ON / OFF
WIDTH	16 ~ 100
HEIGHT	12 ~ 100
MOVE X	8 ~ 92
MOVE Y	6 ~ 94
SENSITIVITY	0 ~ 100

## PRIVACY MASK

MASK NUMBER	MASK 1 - MASK 4
MASK STATE	ON / OFF
MASK COLOR	GRAY/WHITE/RED/GREEN/BLUE/YELLOW/BLACK
WIDTH	4 ~ 100
HEIGHT	4 ~ 100
MOVE X	2 ~ 98
MOVE Y	2 ~ 98

## LANGUAGE

ENG / KOR / RSN / CHN / SPN / FRN

## STABILIZER

ON / OFF

## SYNC

INT

## GAMMA MODE

CRT / LCD / USER

## FACTORY RESET

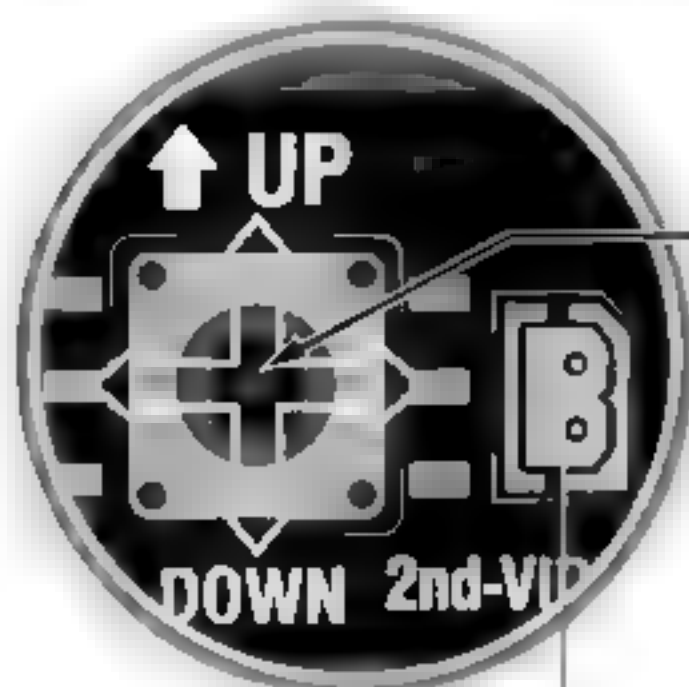
## COMM SET

BAUD RATE 4800 / 9600 / 19200 / 38400 / 57600

SAVE &amp; REBOOT

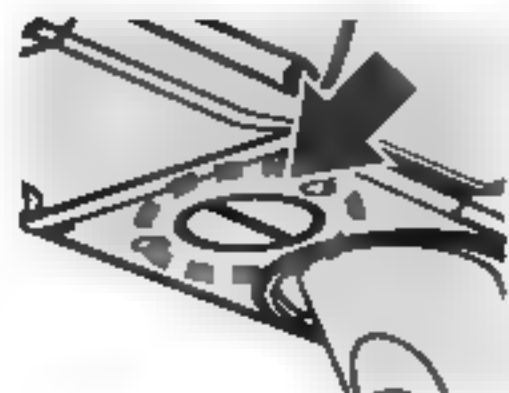
SAVE &amp; EXIT

- ! Push the Joy stick for one second, and the OSD appears on the screen. Move the Joy Stick up, down, left & right to control the OSD functions.



### MENU (SET):

Press joystick in its straight position.



**Service Monitor Connector:**  
Use service monitor connector to set camera angle & focus when installing.

(Image cannot be seen if monitor output and service video output is used simultaneously.)

## SETUP

- Push and hold MENU button 1 second to access the setup mode.
- Select the status using the Joystick. (Up, Down, Left, Right)

### <CAMERA SET MENU>

- |                  |         |
|------------------|---------|
| 1. CAM NAME      | OFF     |
| 2. LENS          | DC LENS |
| 3. EXPOSURE ←    |         |
| 4. DAY/NIGHT     | ired ←  |
| 5. WDR/BLC/ECLPS | OFF     |
| 6. WHITE BAL     | ATW1    |
| 7. 3D-DNR        | ON ←    |
| 8. IMAGE ADJ ←   |         |
| 9. SPECIAL ←     |         |
| 0. SAVE & EXIT ← |         |

➊ Press MENU button, then SETUP mode is activated.

• MAIN SETUP menu is displayed on the monitor.

➋ Select OSD item using UP, DOWN button.

➌ Set details using LEFT, RIGHT button.

➍ Select "Exit" and then press the MENU button to finish the SETUP [Save and Exit]

! In the OSD menu, there is no lens selection mode for fixed lens type cameras.

### <CAMERA SET MENU>

- |                  |         |
|------------------|---------|
| ➤ 1. CAM NAME    | OFF     |
| 2. LENS          | DC LENS |
| 3. EXPOSURE ↵    |         |
| 4. DAY/NIGHT     | ired ↵  |
| 5. WDR/BLC/ECLPS | OFF     |
| 6. WHITE BAL     | ATW1    |
| 7. 3D-DNR        | ON ↵    |
| 8. IMAGE ADJ ↵   |         |
| 9. SPECIAL ↵     |         |
| 0. SAVE & EXIT ↵ |         |



### 1) CAM NAME setup

- Select **ON** using the **LEFT** or **RIGHT** button and then press the **MENU** button.
- Use the four direction buttons to move to a desired letter and select the letter by pressing the **MENU** button.
- Repeat this to enter multiple letters.
- You can enter up to 15 letters.

#### <CAMERA NAME>

A B C D E F G H I J K L M  
N O P Q R S T U V W X Y Z  
a b c d e f g h i j k l m  
n o p q r s t u v w x y z  
- . 0 1 2 3 4 5 6 7 8 9

← → CLR POS END

-----



- ←, → : Move cursor to Left/Right direction from selected character
- CLR : Delete all selected characters
- POS : Set the position of Camera Name on the screen
- END : CAMERA NAME Save & Exit

**1) EXPOSURE setup**

- Select **EXPOSURE** using the UP or DOWN button and then press the MENU button to access **EXPOSURE** menu.

**1 AGC**

Select **AGC** using the UP or DOWN button.  
You can select between **OFF**, **LOW**, **MIDDLE** and **HIGH** using the LEFT or RIGHT button.

**2 BRIGHTNESS**

Select **BRIGHTNESS** using the UP or DOWN button. You can adjust between 0 ~ 80 using the LEFT or RIGHT button.

**3 SHUTTER**

Select **SHUTTER** using the UP or DOWN button. You can select **AUTO**, **OFF**, **A.FLK** or adjust the shutter speed between x 2 ~ x 512, 1/90000 ~ 1/160 using the LEFT or RIGHT button.

**4 DSS**

When the shutter speed is **AUTO** or **A.FLK**, Select **DSS** using the UP or DOWN button. You can adjust the DSS value between **OFF**, **AUTO x(2 ~ 128)** using the LEFT or RIGHT button.

**5 INITIAL SET**

To initialize the setting, Select **INITIAL SET** using the UP or DOWN button and then press the MENU button.

**<EXPOSURE MENU>**

► **AGC** MIDDLE  
**BRIGHTNESS** 50 |||||  
**SHUTTER** AUTO  
**DSS** OFF  
**INITIAL SET** ←  
**PREVIOUS** ←

## 1) DAY / NIGHT setup

- Select DAY/NIGHT using the UP or DOWN button.
- You can select between IRED, DAY, NIGHT and using the LEFT or RIGHT button.

### ① IRED (DAY/NIGHT mode is changing by Cds Sensor)

Select IRED using the LEFT or RIGHT button and then press the MENU button to access D/N IRED menu.

#### ➡ D/N IRED LEVEL

Select D/N IRED LEVEL using the UP or DOWN button. You can select between LOW, MIDDLE and HIGH using the LEFT or RIGHT button.

DAY/NIGHT mode is changed by source of light from bright to dark by HIGH -> MID -> LDW order.

#### ➡ FILTER DLY

Select FILTER DLY using the UP or DOWN button. You can select between 1 SEC, 3 SEC, ■ SEC, 10 SEC, 15 SEC, 30 SEC and ■■ SEC using the LEFT or RIGHT button.

#### ➡ NIGHT BURST

Select NIGHT BURST using the UP or DOWN button. You can select between ON/OFF using the LEFT or RIGHT button.

#### <D/N IRED MENU>

➡ D/N IRED LEVEL	MIDDLE
FILTER DLY	10 SEC
NIGHT BURST	ON
INITIAL SET	←
PREVIOUS	←

## 1) WDR/ BLC/ ECLPS setup

- Select WDR/BLC/ECLPS using the UP or DOWN button.
- You can select between OFF, WDR, BLC and ECLPS using the LEFT or RIGHT button.
- Select the desired menu and then press the MENU button.

## ① WDR

## ➔ WDR LEVEL

You can select between LOW, MIDDLE and HIGH using the LEFT or RIGHT button.

## ➔ LONG

You can select between 1 ~ 60 using the LEFT or RIGHT button.

## ➔ SHORT

You can select between 1 ~ 60 using the LEFT or RIGHT button.

## ② BLC

## ➔ BLC LEVEL

You can select between LOW, MIDDLE and HIGH using the LEFT or RIGHT button.

## &lt;WDR MENU&gt;

➔ WDR LEVEL HIGH  
 LONG 40 (|||||) (|||||)  
 SHORT 40 (|||||) (|||||)  
 PREVIOUS ←

## &lt;BLC MENU&gt;

➔ BLC LEVEL MIDDLE  
 PREVIOUS ←

### 3 ECLIPSE

Select ECLPS and then press the MENU button to access ECLIPSE menu.

#### ➡ AREA SETTING

Select AREA SETTING using the UP or DOWN button and then press the MENU button to access the AREA SETTING mode. The full screen is divided into 16 areas. Use the LEFT or RIGHT button to move to a desired area and then select one of the ON / OFF by pressing the UP or DOWN button. To exit out from the divided screen by pressing the MENU button.

#### ➡ ALL AREA SET

To set all areas, select ALL AREA SET using the UP or DOWN button. You can select between ON / OFF using the LEFT or RIGHT button.

#### ➡ MASK COLOR

Select MASK COLOR using the UP or DOWN button. You can select between GRAY, D. GRAY and BLACK using the LEFT or RIGHT button.

#### ➡ ECLPS LEVEL

Select ECLPS LEVEL using the UP or DOWN button. You can adjust from 1 ~ 5 using the LEFT or RIGHT button.

#### <ECLIPSE MENU>

##### ➡ AREA SETTING ←

ALL AREA SET      OFF  
 MASK COLOR      GRAY  
 ECLPS LEVEL      1 |||||  
 PREVIOUS ←

OFF	OFF	OFF	OFF
OFF	OFF	OFF	OFF
OFF	OFF	OFF	OFF
OFF	OFF	OFF	OFF

## 1) WHITE BAL setup

- Select **WHITE BAL** using the UP or DOWN button.
- You can select between **ATW1**, **ATW2**, **PUSH** and **MANUAL** using the LEFT or RIGHT button.

### ① ATW1

Adjust automatically the white balance on the color temperature range of 2,000 ~ 10,000°K.

### ② ATW2

Adjust automatically the white balance on the color temperature range of 2,000 ~ 12,000°K.

### ③ PUSH

The color temperature is adjusted on the special picture of the current camera screen.

- ➔ Select **PUSH** using the LEFT or RIGHT button and then press the MENU button.



#### 4 MANUAL

To access WB MANUAL menu, select MANUAL using the LEFT or RIGHT button and then press the MENU button.

#### ➡ COLOR TEMP

Select **COLOR TEMP** using the UP or DOWN button. You can select between **INDOOR** and **OUTDOOR** using the LEFT or RIGHT button.

- **INDOOR** : 3200°K
- **OUTDOOR** : 5100°K

#### ➡ RED

Select **RED** using the UP or DOWN button. You can adjust density of RED (-100 ~ 100) using the LEFT or RIGHT button.

#### ➡ BLUE

Select **BLUE** using the UP or DOWN button. You can adjust density of BLUE (-100 ~ 100) using the LEFT or RIGHT button.

#### <WB MANUAL MENU>

▶ **COLOR TEMP**      **INDOOR**  
**RED**                0 ||||| |||||  
**BLUE**              0 ||||| |||||  
**INITIAL SET** ←  
**PREVIOUS** ←

## 1) 3D-DNR setup

- Select 3D-DNR using the UP or DOWN button.
- Select ON using the LEFT or RIGHT button and then press the MENU button.

### 1 LEVEL

Select LEVEL using the UP or DOWN button. You can adjust between 0 - 63 using the LEFT or RIGHT button.

### 2 GLOBAL MOTION

Select GLOBAL MOTION using the UP or DOWN button. You can select between ON / OFF using the LEFT or RIGHT button.

#### <3D-DNR MENU>

▶ LEVEL 40 |||||

GLOBAL MOTION ON

PREVIOUS ◀

## 1) IMAGE ADJ setup

- Select IMAGE ADJ using the LEFT or RIGHT button and then press the MENU button to access IMAGE ADJUST menu.

## ① DIGITAL ZOOM

Select DIGITAL ZOOM using the UP or DOWN button. Select ON using the LEFT or RIGHT button and then press the MENU button to access DIGITAL ZOOM menu.

## ➡ ZOOM

Select ZOOM using the UP or DOWN button. You can control a digital zoom of X1.00 – X6.13 using the LEFT or RIGHT button.

## ➡ DZOOM PAN

Select DZOOM PAN using the UP or DOWN button. You can adjust the screen horizontally within the range from -100 to 100 using the LEFT or RIGHT button.

## ➡ DZOOM TILT

Select DZOOM TILT using the UP or DOWN button. You can adjust the screen vertically within the range from -100 to 100 using the LEFT or RIGHT button.

## &lt;IMAGE ADJUST MENU&gt;

▶ DIGITAL ZOOM	OFF
D-EFFECT	OFF
COLOR	ON
CONTRAST	50
SHARPNESS	55
CR GAIN	0
CB GAIN	0
INITIAL SET	←
PREVIOUS	↶

## &lt;DIGITAL ZOOM MENU&gt;

▶ ZOOM	X1.00
DZOOM PAN	0
DZOOM TILT	0
PREVIOUS	↶

## **② D-EFFECT**

Select **D-EFFECT** using the UP or DOWN button. You can select between **OFF**, **V-FLIP**, **MIRROR**, **ROTATE** using the LEFT or RIGHT button.

➡ **V-FLIP** : You can flip the picture vertically on the screen.

➡ **MIRROR** : You can flip the picture horizontally on the screen.

➡ **ROTATE** : You can rotate 180 degrees the picture.

## **③ COLOR**

Select **COLOR** using the UP or DOWN button. You can select between **ON / OFF** using the LEFT or RIGHT button.

## **④ CONTRAST**

Select **CONTRAST** using the UP or DOWN button. You can adjust between 0 ~ 100 using the LEFT or RIGHT button.

**5 SHARPNESS**

Select **SHARPNESS** using the UP or DOWN button. You can adjust between 0 ~ 100 using the LEFT or RIGHT button. As you increase this value, the picture outline becomes stronger and clearer.

**6 CR GAIN**

Select **CR GAIN** using the UP or DOWN button. You can adjust between -100 ~ 100 using the LEFT or RIGHT button.

**7 CB GAIN**

Select **CB GAIN** using the UP or DOWN button. You can adjust between -100 ~ 100 using the LEFT or RIGHT button.

**1) SPECIAL setup**

- Select **SPECIAL** using the UP or DOWN button and then press the MENU button to access the SPECIAL menu.

**1 CAMERA ID**

Select **CAMERA ID** using the UP or DOWN button. Select **ON** using the LEFT or RIGHT button and then press the MENU button to access the **SET CAMERA ID** menu.

**<SPECIAL MENU>**

▶ <b>CAMERA ID</b>	OFF
MOTION DET	OFF
PRIVACY MASK	OFF
LANGUAGE	ENG
STABILIZER	OFF
SYNC	INT
GAMMA MODE	CRT
FACTORY RESET	←
COMM SET	←
PREVIOUS	←

**➡ CAMERA ID**

Select **CAMERA ID** between 000 ~ 255 using the LEFT or RIGHT button.

**➡ ID POSITION**

Select **ID POSITION** using the UP or DOWN button and then press the MENU button. You can move position of **CAMERA ID** only using the LEFT or RIGHT button.

**<SET CAMERA ID>**

▶ **CAMERA ID** 001 |■■■■■■■■■■|  
**ID POSITION** ←  
**PREVIOUS** ←

001

← → **MOVE AND PRESS SET**



**2 MOTION DET (Display only-no output signal)**

Select **MOTION DET** using the UP or DOWN button.  
To use motion detection function,  
Select **ON** using the LEFT or RIGHT button and then  
press the MENU button.

**➡ ZONE NUMBER**

Select **ZONE NUMBER** using the UP or DOWN button. You can select up to 4 ZONE areas using the LEFT or RIGHT button.

**➡ ZONE STATE**

Select **ZONE STATE** using the UP or DOWN button.  
As you select one of the **ON / OFF** using the LEFT or RIGHT button,  
Determines whether or not to use the selected ZONE area.

**➡ WIDTH**

Select **WIDTH** using the UP or DOWN button. You can enlarge or decrease the horizontal size of the selected ZONE area by using the LEFT or RIGHT button. [16 ~ 100]

**➡ HEIGHT**

Select **HEIGHT** using the UP or DOWN button. You can enlarge or decrease the vertical size of the selected ZONE area by using the LEFT or RIGHT button. [12 ~ 100]

**<MOTION DET MENU>**

➡ <b>ZONE NUMBER</b>	ZONE 1
<b>ZONE STATE</b>	OFF
<b>WIDTH</b>	30
<b>HEIGHT</b>	30
<b>MOVE X</b>	30
<b>MOVE Y</b>	25
<b>SENSITIVITY</b>	50
<b>INITIAL SET</b>	←
<b>PREVIOUS</b>	←

➤ **MOVE X**

Select **MOVE X** using the UP or DOWN button. You can move horizontal position of the selected **ZONE** area by using the LEFT or RIGHT button. [8 ~ 92]

➤ **MOVE Y**

Select **MOVE Y** using the UP or DOWN button. You can move vertical position of the selected **ZONE** area by using the LEFT or RIGHT button. [6~ 94]

➤ **SENSITIVITY**

To setup the sensitivity of motion detection, Select **SENSITIVITY** using the UP or DOWN button. You can adjust the motion sensitivity of a movement within the range 0 to 100 using the LEFT or RIGHT button.

**3** **PRIVACY MASK**

Select **PRIVACY MASK** using the UP or DOWN button. To use privacy mask function, Select **ON** using the LEFT or RIGHT button and then press the MENU button.

➤ **MASK NUMBER**

Select **MASK NUMBER** using the UP or DOWN button. You can select up to 8 **MASK** areas using the LEFT or RIGHT button.

< **PRIVACY MASK** >

➤ <b>MASK NUMBER</b>	<b>MASK 1</b>
<b>MASK STATE</b>	OFF
<b>MASK COLOR</b>	GRAY
<b>WIDTH</b>	30
<b>HEIGHT</b>	30
<b>MOVE X</b>	30
<b>MOVE Y</b>	25
<b>INITIAL SET</b>	↩
<b>PREVIOUS</b>	↩



➔ **MASK STATE**

Select **PRIVACY STATE** using the UP or DOWN button. As you select one of the ON / OFF using LEFT or RIGHT button, Determines whether or not to use the selected MASK area.

➔ **MASK COLOR**

Select **MASK COLOR** using the UP or DOWN button. You can select between GRAY, WHITE, RED, GREEN, BLUE, YELLOW, BLACK using the LEFT or RIGHT button.

➔ **WIDTH**

Select **WIDTH** using the UP or DOWN button. You can enlarge or decrease the horizontal size of the selected MASK area by using the LEFT or RIGHT button. [4 ~ 100]

➔ **HEIGHT**

Select **HEIGHT** using the UP or DOWN button. You can enlarge or decrease the vertical size of the selected MASK area by using the LEFT or RIGHT button. [4 ~ 100]

➔ **MOVE X**

Select **MOVE X** using the UP or DOWN button. You can move horizontal position of the selected MASK area by using the LEFT or RIGHT button. [2 ~ 98]

➔ **MOVE Y**

Select **MOVE Y** using the UP or DOWN button. You can move vertical position of the selected MASK area by using the LEFT or RIGHT button. [2 ~ 98]

Select LANGUAGE using the UP or DOWN button. You can select between ENG, KOR, RSN, CHN, SPN and FRN using the LEFT or RIGHT button.

Select **STABILIZER** using the **UP** or **DOWN** button. To compensate for any camera movement, Select **ON** using the **LEFT** or **RIGHT** button.

Select **GAMMA MODE** using the UP or DOWN button. You can select between **CRT** and **LCD, USER** using LEFT or RIGHT button.

**<USER GAMMA MENU>**

► USER GAMMA 0.45 [ooooooooo]

**PREVIOUS** 

**7** **FACTORY RESET**

Select **FACTORY RESET** using the UP or DOWN button and then press the MENU button to reset to factory default.

! When the **FACTORY RESET** is set, the language is remained previous selected language.

**8** **COMM SET**

Select **COMM SET** using the UP or DOWN button and then press the MENU button to access the **COMM SETTING** menu.

**➔** **BAUD RATE**

Select **BAUD RATE** using the UP or DOWN button. You can select between 4800, 9600, 19200, 38400 and 57600 using the LEFT or RIGHT button.

**➔** **SAVE & REBOOT**

To apply the changed **BAUD RATE**, select **SAVE & REBOOT** using the UP or DOWN button and then press the MENU button.

**<COMM SETTING MENU>**

▶ **BAUD RATE** 9600

**SAVE & REBOOT** ⬅

**PREVIOUS** ⬅

**COMMUNICATION BAUD RATE**

## 1) SAVE & EXIT setup

- To save the settings for all menus and to exit out from the OSD SETUP menu, select **SAVE & EXIT** using the UP or DOWN button and then press the MENU button.



### Note

- When the **FACTORY RESET** is set, the language is remained previous selected language.
- **INITIAL SET**  
To initialize the setting, select **INITIAL SET** using the UP or DOWN button and then press the MENU button.



## 11. TROUBLESHOOTING

### COLOR VIDEO CAMERA

- If you have trouble operating your camera, refer to the following table.  
If the guidelines do not enable you to solve the problem, contact an authorized technician.

Problem	Solutions
Nothing appears on the screen.	<ul style="list-style-type: none"><li>• Check that the power cord and line connection between the camera and monitor are fixed properly.</li><li>• Check that you have properly connected VIDEO cable to the camera VIDEO output jack.</li></ul>
The image on the screen is dim.	<ul style="list-style-type: none"><li>• Is lens stained with dirt? Clean your lens with soft, clean cloth.</li><li>• Set the monitor to proper condition.</li><li>• If the camera is directly exposed to strong light, change the camera position.</li><li>• Adjust the lens' focus properly.</li></ul>
The image on the screen is dark.	<ul style="list-style-type: none"><li>• Adjust the contrast feature of the monitor.</li><li>• If you have an intermediate device, set the 75ohms/ Hi-z properly.</li><li>• Adjust DC Level, on the OSD menu.</li></ul>
The camera is not working properly, and the surface of the camera is hot.	<ul style="list-style-type: none"><li>• Check that you have properly connected the camera to an appropriate power source.</li></ul>
The image on the screen flickers.	<ul style="list-style-type: none"><li>• Is the camera facing to direct sunlight or fluorescent lighting? Change the camera position.</li></ul>

## 12. SPECIFICATIONS

**WEATHERPROOF IR LED**

MODEL	X-WDR (Wide Dynamic Range)	
Signal System	NTSC	PAL
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Image Sensor	1/3 inch High sensitivity CCD	
Video Output	1.0Vp-p Composite Signal (75 ohms)	
Sync. System	Internal Sync	
Luminance S/N Ratio	52dB Min. (AGC OFF)	
Horizontal Resolution	580 TV Lines (BW 650 TV lines)	
Sensitivity / Min.Illumination	LED on: 0 Lux, LED off: 0.05 Lux (Color) / 0.0002 Lux (Sens-Up Auto, Color)	
Brightness	0 - 80	
Shutter	AUTO / OFF / A.FLK / x (2 - 512) / (1/90000 - 1/160)	
DSS	OFF / AUTO x (2 - 128)	
3D-DNR	ON / OFF ( 0 - 63)	
White Balance	ATW1 / ATW2 / PUSH / MANUAL	
AGC	OFF / LOW / MID / HIGH	
WDR	Up to 60 dB (LOW / MIDDLE / HIGH)	
BLC	LOW / MIDDLE / HIGH	

<b>ECLIPSE</b>	ON / OFF (16 Zones)
<b>Stabilizer</b>	ON / OFF
<b>Digital-ZOOM</b>	x 1.00 ~ x 6.13
<b>Day &amp; Night</b>	IRLED / DAY / NIGHT
<b>Night Burst</b>	ON / OFF
<b>Motion Detection</b>	ON / OFF (4 Programmable Zone)
<b>Privacy</b>	ON / OFF (8 Programmable Zone)
<b>D-EFFECT</b>	V - FLIP / MIRROR / ROTATE
<b>Sharpness</b>	1 ~ 100
<b>Baud Rate (RS-485)</b>	4800 / 9600 / 19200 / 38400 / 57600
<b>OSD Language</b>	ENG / KOR / RSN / CHN / SPN / FRN
<b>Lens</b>	DC Iris Vari-focal Lens (f=7.5 ~ 50mm F1.3)
<b>IR LED &amp; SENSOR</b>	SR LED 12EA (855nm 12"), Sensor 1EA (Beam spreads Max. 80m<262ft>)
<b>Supply Voltage</b>	12V DC (±10%)
<b>Power Consumption</b>	Max. 20W (1.7A / 12V DC)
<b>Operating Temperature/Humidity</b>	-30°C to 50°C (-22°F to 122°F) <with Fan & Heater> / 30% ~ 80% RH
<b>Storage Temperature/Humidity</b>	-20°C to 60°C (-4°F to 140°F) / 20% ~ 90% RH

DIGITAL IR CAMERA SERIES  
**WEATHERPROOF D&N IR CAMERA**



P/N : 3810-0233A©  
[Ver.1101E]

D&N IR Color Camera Series

- Design and specifications are subject to change without notice.

